

Remarks:

Claims 1-29 are pending in this application. Applicants have amended claims 1, 4, 8, 9, 14, and 16, added claim 29, and cancelled claim 5 to clarify the claimed invention. Applicants respectfully request favorable reconsideration of this application.

The Examiner maintained the restriction requirement based on the assertion that unity of invention was found not to exist during the international phase. However, this is not actually the case. Along these lines, the PCT claims as originally filed were deemed by the PCT examiner to lack unity of invention. Therefore, in order to have all three inventions searched two additional search fees were paid as required. However, the payment of an additional search fee may be made under protest. That is, an Applicant may submit with the additional search fee a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

In the present application, Chapter II of PCT was entered by filing a demand in May 2005. In June 2005 an invitation to restrict or pay additional fees was received from the PCT authority. This invitation was answered in August 2005 with claim amendments. Finally, an IPRP was issued in October 2005 based on the amended claim as originally filed in the present application, with the exception of the removal of "subsea" from the claims and the addition of new claim 28. In the IPRP the Examiner concluded that unity of invention was complied with in view of the claim amendments. Unity of invention exists at least in part because the features of the seal recited in claim 1 are common features of the valve device recited in claim 18.

In view of the above, unity of invention exists in this application and the restriction requirement is improper. Accordingly, Applicants respectfully request withdrawal of the restriction requirement and examination of all of claims 1-28. Additionally, Applicants wish to point out that claim 28 depends from claim 1 and should have been included in the group of claims 1-17.

New claim 29 is described in the specification in the last sentence in paragraph 0010.

The Examiner rejected claims 1-6 under 35 U.S.C. § 102(b) as being anticipated by EP 0040268 to Beckershoff.

Beckershoff does not disclose the claimed invention since, among other things, Beckershoff does not disclose a hydraulic coupling structure that can couple together conduits that are non-movable in operation, where the non-movable parts are components of interconnectable processing modules in a fluid-tight manner. Typically, such parts are components in an offshore oil and gas installation. Rather, Beckershoff discloses a structure that is designed/used for working as a pipe coupling between two fluid-carrying movable machine parts, where the fluid is a coolant, as illustrated by elements 9 shown in Fig. 2. Typically, such movable parts are included in thermal engines, especially gas turbines, which are quite different than components in an offshore oil and gas installation.

Accordingly, the claimed invention discloses a static seal in that the seal is not designed to be used between two movable machine parts and does not include a multiple bellows

(intermediate member) to compensate for the movements (axially and radially) of the conical seats (sealing surfaces).

Beckershoff on the other hand discloses a dynamic seal in that the coupling is to be used between two movable machine parts, as represented by elements 9 in Fig. 2. Thus, the conical seats at each end are moving (under pressure) and the "seal" follows the movements at both ends (axially and radially) which movements seem to be compensated by the casing in the form of the multiple bellows (2) also called "Kompensator" especially at larger angles. The semi-spherical ends of the pipe coupling thus slide against matching sealing surfaces (10) arranged conically around fluid passages (8) of the moveable machine parts.

Beckershoff does not disclose the material of semi-spherical ends and the matching sealing surfaces (10). However, if metallic material is assumed scratches are most likely to occur in the sealing surfaces sliding against each other and the sealing will not be especially tight after some time. Thus, it seems to be difficult to achieve an absolute fluid-tight metal against metal seal, which the claimed invention can provide, and even more difficult since the movable machine parts move under large angles by the coupling in Beckershoff. A metal-to-metal seal as of the present invention requires to be placed still, otherwise the sealing surfaces will quickly wear against each other causing leakage.

Furthermore, the claimed invention includes a single disc shaped intermediate member that is mechanically compressible so as to allow for a sufficient stiffness to able to achieve an axial pre-tension required for an absolute fluid-tight seal. This is in contrast to Beckershoff,

which discloses a structure that includes a rounded off bellows that seems to be much more elastic or “softer” so as to compensate for movements of the two moveable machine parts as mentioned above and, thus, not mechanically compressible as the disc-shaped intermediate member of the claimed invention. The disc-shaped member of the claimed invention allows for an effective axial and radial self-alignment in that the sealing element (male coupling part) is pulled/put in static place between its respective female coupling parts by the axial pre-tension of the sealing element thanks to the disc shaped intermediate member that is mechanically compressible so as to be capable of storing elastic energy when subjected to axial compression, in contrast to the dynamic seal disclosed by Beckershoff. The disc-shaped intermediate member of the sealing element is also designed to be surrounded by a retainer (seal) plate having an annular inner recess 82 that accommodates the outer edge of the disc-shaped intermediate member, as shown, for example, in Fig. 6 and described in the last sentence of paragraph 0057. The sealing element is thus allowed to float both axially and radially thanks to this configuration which is substantially facilitated by the disc-shaped intermediate member.

As described above, the sealing element is self-aligning during the completion of the hydraulic connection. This self-aligning feature also gives room for less precise positioning of the two female coupling parts, which is extremely important when used in, for example, a multi-bore arrangement. Another great advantage of the claimed invention is that the sealing element (male coupling part) 20 may be independently retrieved, that is, without having to retrieve either of the female coupling parts 10, 30, as described in the last sentence in paragraph 0045.

Furthermore, a single disc-shaped member according to the claimed invention can

provide a higher sealing force than the multi-wave bellows design of Beckershoff.

Also, the single disc-shaped member according to the claimed invention provides a much more compact design in the axial direction as compared to the multiple bellows structure disclosed by Beckershoff. The structure disclosed by Beckershoff appears to require a long distance, such as two to three radii distance, between the center of the semi-spherical end pieces. On the other hand, the claimed invention can provide a structure where the corresponding distance may be less than two radii, thanks to the single disc-shaped intermediate member. The pipe coupling in Beckershoff requires a large separating structure between the end pieces because it is designed to accommodate for large radial movements between two moveable machine parts, wherein the multiple bellows work as "Kompensator" at larger angles as mentioned above.

Additionally, Beckershoff does not disclose a structure that is axially expandable and that is mechanically compressible so as to be capable of storing elastic energy when the body is subjected to axial compression. Additionally, Beckershoff requires a guide tube (4) that is connected rigidly to one of the semi-spherical end pieces (3) at one end and by means of its free end engages so as to be axially displaceable into the passage of the other end piece. The claimed invention does not require such a guide tube. Furthermore, the guide tube acts as a support for the bellows structures. The claimed invention does not include such a tube or require such side support.

The disc shaped member recited in claim 1 can act as a bi-directional spring. Furthermore, Beckershoff requires an internal overpressure of fluid, whereas the claimed

invention provides a design that is effective also with an external overpressure.

In view of the above, Beckershoff does not disclose all elements of the invention recited in claims 1-17. Since Beckershoff does not disclose all elements of the invention recited in claims 1-17, the invention recited in claims 1-17 is not properly rejected under 35 U.S.C. § 102(b). For an anticipation rejection under 35 U.S.C. § 102(b) no difference may exist between the claimed invention and the reference disclosure. *See Scripps Clinic and Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q. 841 (C.A.F.C. 1984).

Along these lines, anticipation requires the disclosure, in a cited reference, of each and every recitation, as set forth in the claims. *See Hodosh v. Block Drug Co.*, 229 U.S.P.Q. 182 (Fed. Cir. 1986); *Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir. 1985); *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986); and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986).

In view of the above, the reference relied upon in the office action does not disclose patentable features of the claimed invention. Therefore, the reference relied upon in the office action does not anticipate the claimed invention. Accordingly, Applicants respectfully request withdrawal of the rejections based upon the cited reference.

In conclusion, Applicants respectfully request favorable reconsideration of this case and early issuance of the Notice of Allowance.

If an interview would advance the prosecution of this case, Applicants urge the Examiner to contact the undersigned at the telephone number listed below.

The undersigned authorizes the Commissioner to charge fee insufficiency and credit overpayment associated with this communication to Deposit Account No. 22-0261.

Respectfully submitted,

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/Eric J. Franklin/  
Eric J. Franklin, Reg. No. 37,134  
Attorney for Applicants  
Venable LLP  
575 Seventh Street, NW  
Washington, DC 20004  
Telephone: 202-344-4936  
Facsimile: 202-344-8300